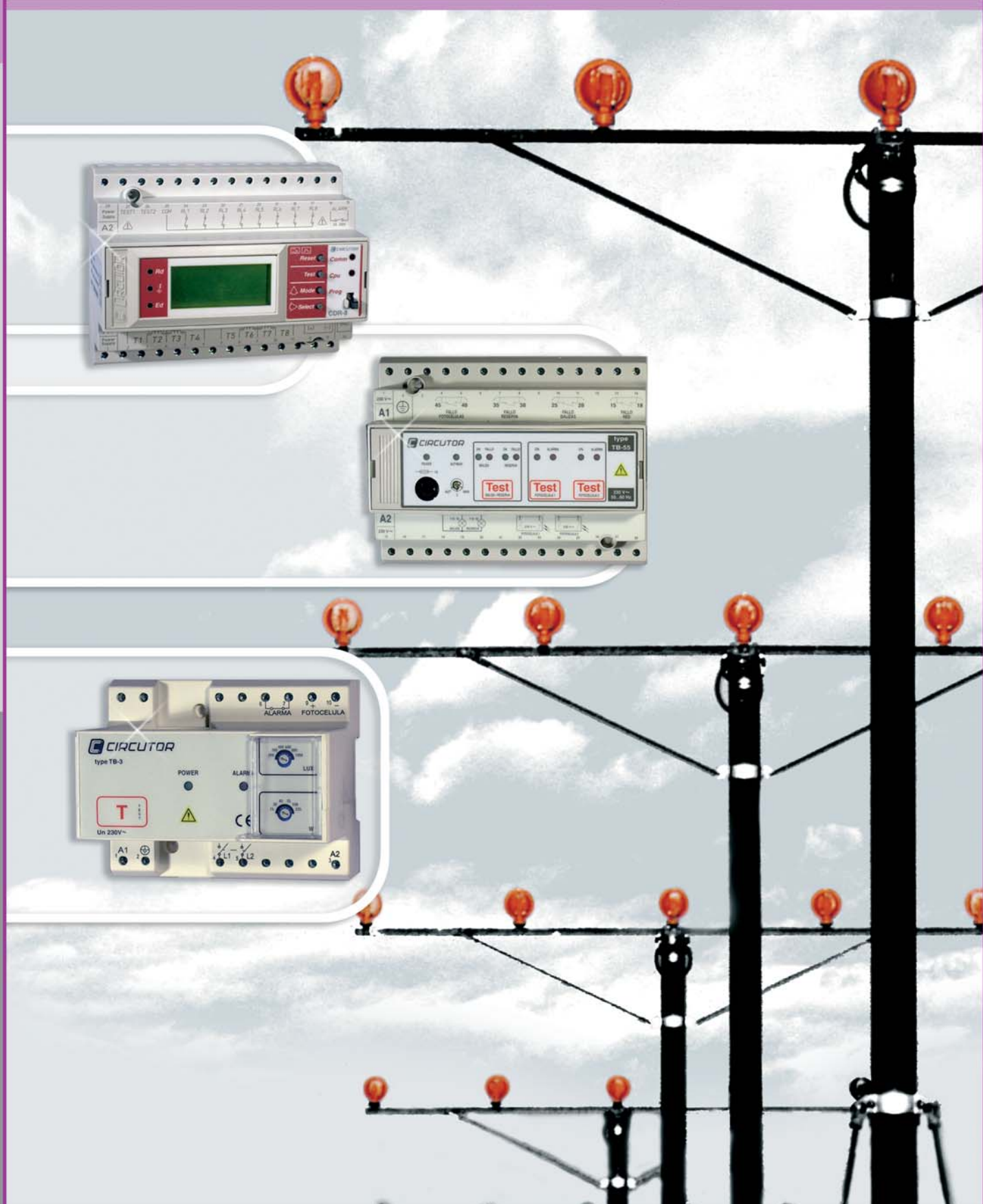
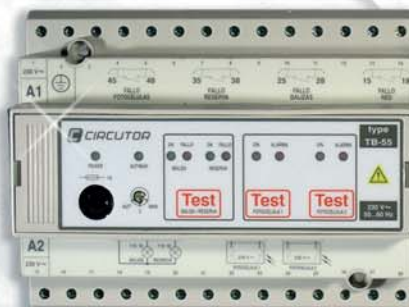


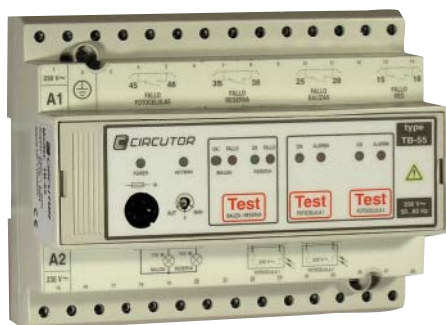
RELAYS AND CONTROL ELEMENTS

P.3.01 GB





BEACON CONTROL RELAY TB-55



Night time signalling for metal, aerial support structures comprises a series of obstacle lights called beacons. These start operating when the luminosity level is less than a predetermined threshold.

The luminosity level is detected by an external photo-electric cell (not included). Therefore, according to the type of photo-electric cell there will be one particular sensitivity.

The equipment has two independent beacon circuits, one main circuit and one reserve. These detect anomalies using consumption measurement generating four different types of alarm.

The total of the different beacon powers must be equal to 110 W. Parallel connections (redundancy) is recommended.

Type	Code
TB-55	P30101

FEATURES

Power supply	
Voltage	Single-phase 230 V a.c. ($\pm 20\%$)
Frequency	50...60 Hz
Equipment consumption	5 V·A
Light consumption	220 W (main + reserve)
Output relay features (alarm)	
Isolating voltage (U_i)	250 V a.c. / 30 V d.c.
Thermal current I_{th}	5 A
Maximum operating power	1 250 V·A
Mechanical life	1 x 10 ⁶ operations
Electrical life	1 x 10 ⁶ operations
Features of the photo-electric cells (not included)	
Type of contact	Voltage contact from 0 to 230 V a.c.
Maximum number of beacons	Limited by powers (110 W) Example: 2 x 55 W beacons, 5 x 22 W beacons
Assembly features	
Type of casing	Modular inflammable plastic
Connection	Metal terminals with "posidriv" screws
Mounting	DIN rail 46277 (EN 50022) Screw mounting option ($\varnothing 4,2$ mm passing hole for fixing))
Dimensions	8 modules (140 x 70 x 110 mm) (according to DIN 43880)
Protection grade	Built in relay IP 41 Terminals IP 20
Safety	Category II, EN 61010
Environmental conditions	
Operating temperature	- 5 °C / + 55 °C
Standards	IEC 1008, IEC 255-5, UNE 801-2, UNE 801-3, UNE 801-4, UNE 60730-1

BEACON CONTROL RELAY TB-3



The **TB-3** equipment controls the lighting up of one group of 1, 2 or 3 75 W / 230 V a.c. (per beacon) beacons or 15 W / 230 V d.c. beacons using a photo-electric cell supplied with the equipment, emitting an alarm in the event of one of them breaking down (consumption is measured).

The luminosity threshold as well as the beacon cut off sensitivity are selectable.

In order to prevent accidental operation the cell includes a 1 min delay when operating (avoiding false readings). The activation of the alarm is delayed by 1 s (longer when experiencing system disturbances).

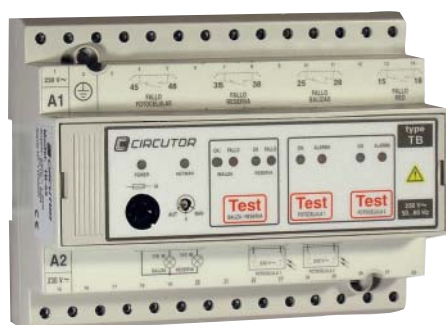
Type	Code
TB-3	P30102

FEATURES

Power supply	
Voltage	230 V a.c. ($\pm 20\%$)
Frequency	50 ... 60 Hz
Equipment consumption	5 V·A
Light consumption	225 W
Beacon light	
Powers	15, 30, 45, 75, 150, 225 W
Accuracy	$\pm 10\%$
Type de measurement	True effective value
Luminosity	
Ranges	200, 300, 400, 600, 800, 1 000 lx
Accuracy	$\pm 10\%$
Inputs and Outputs	
Power supply inputs (A1 and A2)	230 V a.c. ($\pm 20\%$) ; 50...60 Hz Earthing terminal
Photocell inputs	Photocell (+) (-)
Beacon light outputs	Power supply: 230 V a.c. ($\pm 20\%$) Output terminals: 2 marked as L1 and L1 protected by a 65 J capacity varistor
Alarm relay outputs	Output terminals: 2 marked as ALARM (NC) Nominal switching current: 0,5 A a.c. Nominal switching voltage: 200 V a.c. Isolating voltage between coil and contacts: 2 500 V a.c.
Isolation	
Between different input / output groups and the power supply input	1 G Ω
Between the input and the casing	1 G Ω
Dielectric rigidity (between casing and terminals)	2 500 V a.c. / 1 min
Assembly features	
Type of casing	Modular inflammable plastic
Connection	Metal terminals with "posidrive" screws
Mounting	DIN rail
Dimensions	6 modules
Protection grade	Built in relay: IP 41; Terminals: IP 20
Environmental conditions	
Operating temperature	-10 °C / +50 °C
Standards	IEC 1008, IEC 255-5, UNE 801-2, UNE 801-3, UNE 801-4, UNE 60730-1



BEACON CONTROL RELAY TB



Type **TB** beacon controlling equipment supervises, controls and transmits possible faults in the different beacon equipment in telephone transmission masts.

The equipment controls the lighting for two groups of two 75W / 230V AC. lights, using a set of two photocells located on the mast. These indicate when the luminosity level falls below the preset threshold, closing one internal contact and sending a 230V AC. voltage to the **TB** photocell's input (photocell 1 and photocell 2). These photocells are not supplied with the equipment.

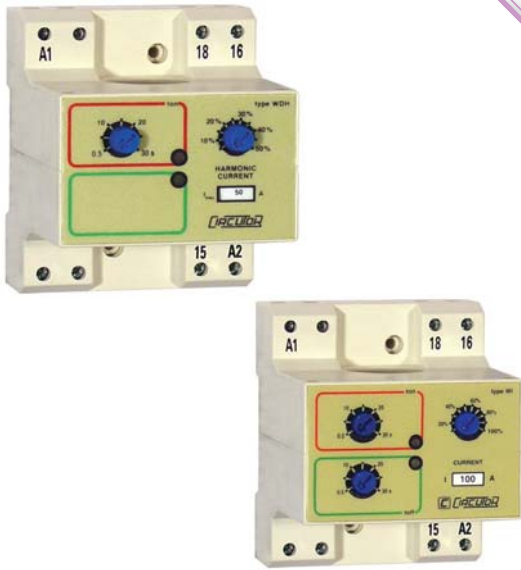
The equipment detects possible failures with the service and reserve beacon lamps by measuring their individual consumption. This also controls the operation of the two photocells. It automatically performs daily checks on the status of the beacons and the photocells. The alarm is via LED on the front of the equipment. Each alarm is linked to a free voltage relay output connected to a control and operations board.

Type	Code
TB	P30104

FEATURES

Power supply	
Voltage	Single-phase 230 V a.c. ($\pm 20\%$)
Frequency	50...60 Hz
Equipment consumption	5 V·A
Light consumption	305 W (main + reserve)
Output relay features (alarm)	
Isolating voltage (U_i)	250 V a.c. / 30 V d.c.
Thermal current I_{th}	5 A
Maximum operating power	1 250 V·A
Mechanical life	1 X 10 ⁵ operations
Electrical life	1 X 10 ⁵ operations
Features of the photo-electric cells (not included)	
Type of contact	Voltage contact from 0 to 230 V a.c.
Maximum number of beacons	Limited by powers (150 W) Example: 2 x 75 W beacons
Assembly features	
Type of casing	Modular inflammable plastic
Connection	Metal terminals with "posidriv" screws
Mounting	DIN rail 46277 (EN 50022) Screw mounting option (\varnothing 4.2 mm passing hole for fixing)
Dimensions	8 modules (140 x 70 x 110 mm) (according to DIN 43880)
Protection grade	Built in relay IP 41 Terminals IP 20
Safety	Category II, EN 61010
Environmental conditions	
Operating temperature	- 5 °C / + 55 °C
Standards	IEC 1008, IEC 255-5, UNE 801-2, UNE 801-3, UNE 801-4, UNE 60730-1

WI CURRENT DETECTOR RELAY WDH HARMONICS DETECTOR RELAY



The **WI** current and **WDH** harmonic detector relays are electronic devices with an output contact that connects or disconnects according to the level of current or harmonic currents detected in the circuit.

The trip level is adjustable and the re-arm is automatic with a current 10% less than the trip current.

It has a trip delay system with adjustable times. Both settings are made from controls on the front.

Measurement is done via a current transformer, with the equipment built in or separate to provide galvanic isolation between the measurement circuit and the system.

The equipment measures true effective value providing a degree of protection which is impossible with classic thermal protection devices which are much more insensitive to harmonic overloads.

Trip time (settable)	Margin of setting (settable)	Type	Code
0,5 ... 30 s	0,5 ... 5 A	WI / 005-30	P32011
0,5 ... 30 s	1 ... 10 A	WI / 010-30	P32012
0,5 ... 30 s	2 ... 20 A	WI / 020-30	P32013
0,5 ... 30 s	5 ... 50 A	WI / 050-30	P32014
0,5 ... 30 s	10 ... 100 A	WI / 100-30	P32015
0,5 ... 30 s	acc./transf .../ 5 A	WI / TS	P32010

Trip time (settable)	Nominal current I_n	Type	Code
0,5 ... 30 s	10 A	WDH / 010-30	P32022
0,5 ... 30 s	20 A	WDH / 020-30	P32023
0,5 ... 30 s	50 A	WDH / 050-30	P32024
0,5 ... 30 s	100 A	WDH / 100-30	P32025
0,5 ... 30 s	acc./transf .../ 5 A	WDH / TS	P32020

FEATURES

	WDH	WI
Application	Transformer protection, capacitor banks, etc. In general, any receiver subject to harmonic overloads	Controlling laminators, extruders, pumps, etc. Generally, controlling motor loads.
Power supply		
Voltage*	230 / 240 V a.c. (+10% / -15%)	
Frequency*	50 Hz	
Consumption	2 W or V·A	
Test voltages between circuits and system		
Measurement circuit	2 500 V	
Relay contacts	1 500 V	
Output relay		
Isolating voltage U_i	250 V a.c.	
Thermal current I_{th}	5 A	
Cut off power:	(10 ⁵ operations)	
with resistive load U_o / I_o	240 V a.c. / 3,2 A	
with inductive load U_o / I_o	240 V a.c. / 0,8 A 30 V d.c. / 1,6 A	
Assembly features		
Mounting	DIN rail	
Dimensions	4 modules	
Weight	250 g	
Protection grade	IP 40	
Operating temperature	0 °C / 50 °C	
Standards	IEC 605, IEC 1010-1, EN 61010-1, EN 50 081, EN 50 082, IEC 255, UL 94, UNE 20 607, UNE 20 608, UNE 21 136, VDE 0110	

*On request, other voltages and frequencies



CDR-8



The **CDR-8** is an instrument that measures, calculates and displays the current in true effective value, being able to make decisions on actions to be carried out. It can act as a maximum, minimum current relay and an overload/short circuit earth leakage relay. To do this, it has 8 input channels, 8 operation relay outputs (1 per channel), one alarm output and one test output.

Depending on the setting, the output relays may act as relays with a seal or with a recoverable trip.

The **CDR-8** allows the current or earth leakage and the status of the operation relay in each of the 8 channels to be displayed on an LCD display.

It is also possible to communicate with the "PowerStudio" PC software (included) using RS-485 communications. This allows recordings, graphs and histories, etc to be displayed.

Type	Code
CDR-8	P32111

FEATURES

Power supply voltage		Remote signalling (Outputs)	
Auxiliary power supply	230 V a.c. (+20% / -15%)	Contacts	Pre-alarm indicator NO/NC output configurable
Output contacts	NO/NC contact configurable 250 V a.c., 5 A	Communications	RS-485. POWERSTUDIO supervision and remote control software
No. of channels	8	Cut off device control	8 single relays NO/NC configurable (one per channel)
Class in differential mode	A (super-immunised)	Output contacts	NO/NC contact configurable 250 V a.c., 5 A
Measurement	TRMS. Accuracy: 5 %	Environmental conditions	
Current / Sensitivity threshold	With WG series transformer: Programmable 0,03...3 A With WGP series transformer: Programmable 0,3...30 A	Operating temperature	-10 °C / +50 °C
Delay	Inverse curve: instant or selective Defined time: 0,1...10 s	Assembly features	
Earth leakage transformer	External, WG/WGP series	Mounting	DIN rail
Test and Reset	Using keys	Dimensions	8 Modules
Associated cut off device	Trip against minimum or emission coil		
Self reclosing			
No. of earth leakage reclosures	Programmable: 0...10		
Time between reclosures	Programmable: 1...900 s		
Time for partial returning the meter to zero	Double the reclosure time		
Signalling in the relay			
LED	Earth leakage LED permanently on: protection trip Earth leakage LED flashing: prealarm CPU LED: indicating the presence of voltage Ed LED: earth leakage reclosing sealed Rd LED: self reclosing enabled Comm LED: relay communicating by RS-485		
Display	Indicating current level present in each channel Indicating the status of each channel (ON-OFF)		

ROYAL A-4



fig.1



fig.2

The **ROYAL A-4** is a high luminosity, 4 digit digital indicator measuring a wide range of parameters (V c.a., A c.a., Hz, W, var, V·A, FP, THD, etc.)

Totally programmable (Transformation ratio, relay trips, hysteresis, etc.). Measurement in true effective value. Four quadrant measurement (power generated and consumed). Suitable for single phase and three phase systems. It has 2 built in relay outputs. Measurement of MAX and MIN

Measur.	Input	Mounting	Type	Code	Figure
A.C.	.../ 5 A	DIN rail	Royal A4	M20242	fig.1
A.C.	.../ 5 A	Panel	Royal A4-P	M20241	fig.2

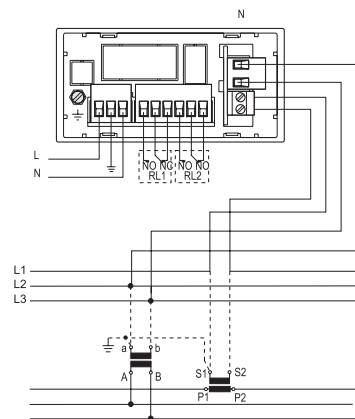
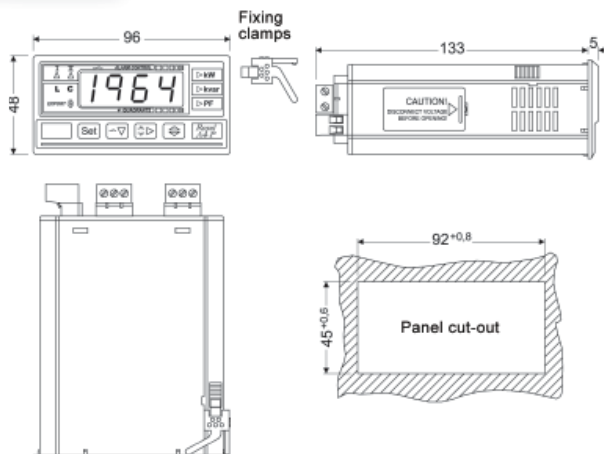
FEATURES

Power supply voltage	230 V a.c. (± 15%)
Consumption	3 V·A
Frequency	40 ... 70 Hz
Measurement circuit	
Scope	20...500 V a.c. .../ 5 A
Accuracy	0,5 % F.E.
Voltage overload (permanent / for 10 s)	1,2 U_n / 2 U_n
Current overload (permanent / for 10 s)	1,2 I_n / 5 I_n

Display	7 x 14 mm segments, red
Display	4 digits
Environmental conditions	
Storage Temperature	- 25 °C / +70 °C
Operating temperature	0 °C / +50 °C
Relative Humidity	95 % to 40% without condensation
Assembly features	
Casing material	Inflammable plastic
Protection grade	Casing and terminals: IP 20 / Frontal: IP 52
Weight	350 g
Standards	IEC 1010, IEC 348, IEC 664, VDE 0435, VDE 0110

DIMENSIONS

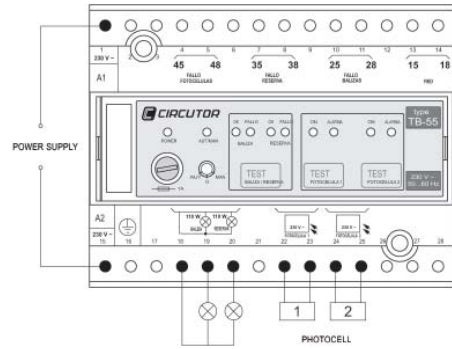
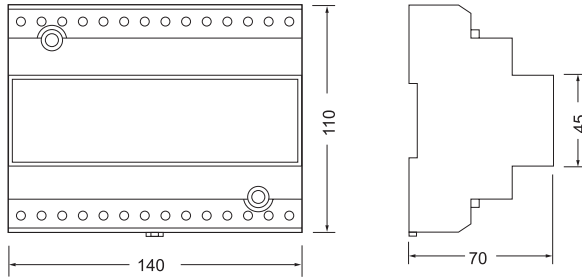
ROYAL A4



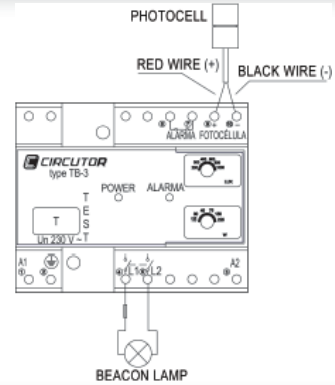
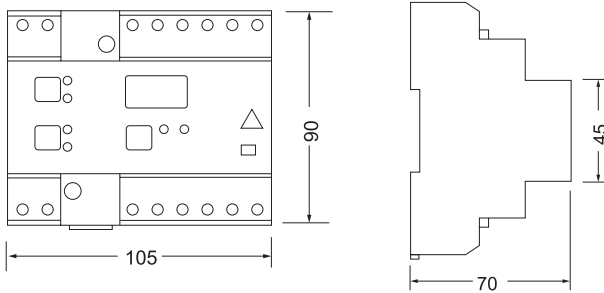


DIMENSIONES

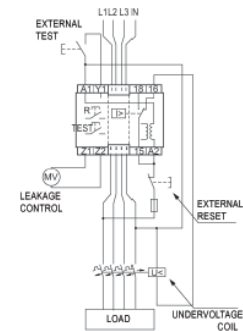
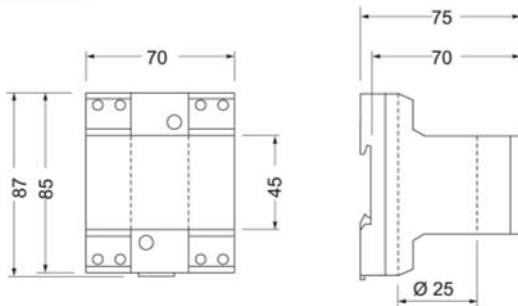
TB-55 / TB



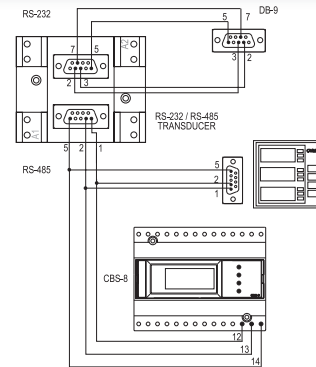
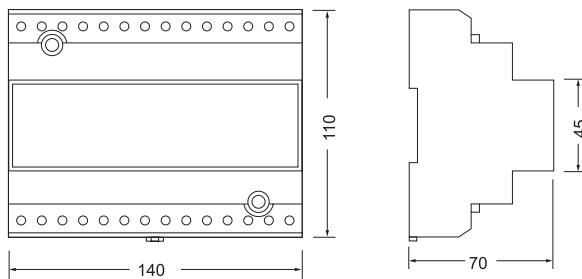
TB-3



WI-WDH



CDR-8



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